

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A circuit-breaker, which has at least one arcing chamber which is filled with an isolating gas, extends along a longitudinal axis (1), is designed to be essentially radially symmetrical, contains an arc area and has at least two power contact pieces, with at least one of the power contact pieces being in the form of a moving or stationary tubular hollow contact, which is provided for dissipating hot gases from the arc area into an exhaust volume, having a deflection device, which is arranged on the side of the hollow contact facing away from the arc area, interacts with at least one first opening in the hollow contact and is connected to a connecting piece, for the radial deflection of the hot gases into the exhaust volume, which is connected through at least one second opening to an arcing chamber volume, with at least one first intermediate volume being provided between the hollow contact and the exhaust volume, wherein

- the following ratios are complied with:

$$V1/A1 = (0.1 \text{ to } 0.5) \text{ m},$$

$$V2/A2 = (0.1 \text{ to } 0.5) \text{ m},$$

$$V3/A3 = (1.0 \text{ to } 2.5) \text{ m},$$

where: V1 is the volume within the hollow contact and A1 is the cross section of the first opening, V2 is the volume of the first intermediate volume and A2

is the cross section of the third opening, V_3 is the volume of the exhaust volume and A_3 is the cross section of the second opening.

2. (Previously Presented) The circuit-breaker as claimed in claim 1, wherein
 - the at least one first intermediate volume is arranged in a stationary fixed manner in the exhaust volume and this is arranged in a stationary fixed manner in the interior of an arcing chamber isolator which bounds the arcing chamber volume, with the hollow contact being movable together with the connecting piece relatively to them.
3. (Previously Presented) The circuit-breaker as claimed in claim 1, wherein
 - the at least one first intermediate volume is firmly connected to the hollow contact and to the connecting piece, and can move together with them through the exhaust volume, which is arranged such that it is stationary, relative to the exhaust volume.
4. (Previously Presented) The circuit-breaker as claimed in claim 1, wherein
 - the at least one first intermediate volume is firmly connected to the hollow contact, to the connecting piece and to the exhaust volume, and can move together with them through the arcing chamber volume, relative to the arcing chamber volume.

5. (Previously Presented) The circuit-breaker as claimed in claim 1
 - wherein the at least one first intermediate volume is arranged concentrically with respect to the deflection device,
 - wherein the at least one first intermediate volume is bounded from the exhaust volume by a first wall,
 - wherein the first wall has at least one third, radially aligned opening, which connects the intermediate volume to the exhaust volume, and
 - wherein the first wall is composed of a highly thermally conductive material, in particular of a metal or of a plastic which can evaporate.
6. (Previously Presented) The circuit-breaker as claimed in claim 1,
 - wherein at least one second intermediate volume, which is referred to as an additional volume, is provided between the first intermediate volume and the exhaust volume, and
 - wherein this additional volume is preferably arranged concentrically.
7. (Currently Amended) The circuit-breaker as claimed in claim 6,
 - wherein the at least one additional volume ~~(16)~~ is bounded from the intermediate volume by the first wall and from the exhaust volume by a second wall,
 - wherein the second wall has at least one fourth, radially aligned opening, which connects the additional volume to the exhaust volume, and
 - wherein the second wall is composed of a highly thermally conductive material, in particular of a metal or of a plastic which can evaporate.

8. (Currently Amended) The circuit-breaker as claimed in claim 7,

- wherein the following ratios are complied with:

$$V_1/A_1 = (0.1 \text{ to } 0.5) \text{ m},$$

$$V_2/A_2 = (0.1 \text{ to } 0.5) \text{ m},$$

$$V_3/A_3 = (1.0 \text{ to } 2.5) \text{ m}, \text{ and}$$

$$\frac{V_3}{A_3} \geq \frac{V_4}{A_4} \geq \frac{V_2}{A_2},$$

$$\frac{V_3}{A_3} \geq \frac{V_4}{A_4} \geq \frac{V_2}{A_2}$$

where: V_1 is the volume within the hollow contact and A_1 is the cross section of the first opening, V_2 is the volume of the first intermediate volume and A_2 is the cross section of the third opening, V_3 is the volume of the exhaust volume and A_3 is the cross section of the second opening, V_4 is the volume of the additional volume and A_4 is the cross section of the fourth opening.

9. (Previously Presented) The circuit-breaker as claimed in claim 5,

- wherein the at least one first opening is offset on the circumference with respect to the at least one third opening, such that it is not possible for the hot gases to flow in a straight line in the radial direction through the intermediate volume.

10. (Previously Presented) The circuit-breaker as claimed in claim 5,

- wherein the at least one first opening is arranged at the circumference with respect to the at least one third opening such that at least some of the hot gases can flow in a straight line in the radial direction through the intermediate volume.

11. (Previously Presented) The circuit-breaker as claimed in claim 6,
 - wherein the at least one fourth opening is offset at the circumference and/or in the axial direction with respect to the at least one third opening such that it is not possible for the hot gases to flow in a straight line in the radial direction through the additional volume.
12. (Previously Presented) The circuit-breaker as claimed in claim 6,
 - wherein the at least one fourth opening is arranged with respect to the at least one third opening such that at least some of the hot gases can flow in a straight line in the radial direction through the additional volume.
13. (Previously Presented) The circuit-breaker as claimed in claim 1,
 - wherein the volume V1 within the hollow contact is 0.33 liters and the cross section A1 of the first opening is 1 850 square millimeters,
 - wherein the volume V2 of the intermediate volume is 0.7 liters and the cross section A2 of the third opening is 3 800 square millimeters, and
 - wherein the volume V3 of the exhaust volume is 8 liters and the cross section A3 of the second opening is 4 000 square millimeters.
14. (Previously Presented) The circuit-breaker as claimed in claim 8,
 - wherein the opening is closed by a shutter which has a large number of holes.

15. (Previously Presented) The circuit-breaker as claimed in claim 14,
- wherein a vertical distance H is provided between the outer face of the wall and the inner face of the wall opposite it,
 - wherein the holes each have a diameter D, and
 - wherein the ratio H/D is intended to be in the range from 5 to 1.5.
16. (Previously Presented) The circuit-breaker as claimed in claim 15,
- wherein an axial distance S is provided between the centers of the holes and is defined by the following relationship:
- $$S = 1.4 \times H.$$
17. (Previously Presented) The circuit-breaker as claimed in claim 14,
- wherein the holes have inclined side walls, such that the holes widen in the flow direction of the hot gas.
18. (Previously Presented) The circuit-breaker as claimed in claim 17, wherein
- the side walls of the widening holes are at an angle in the range from 35° to 50°, but are preferably at an angle of 45°, with respect to the longitudinal axis of the holes.
19. (Previously Presented) The circuit-breaker as claimed in claim 16, wherein
- further holes, which are shifted at the circumference with respect to the holes, are arranged such that the impact points of the gas jets flowing through the holes on the opposite wall are separated by the distance S all round.

20. (Previously Presented) The circuit-breaker as claimed in claim 1, wherein
- the at least one intermediate volume is designed such that it can be installed retrospectively in circuit-breakers which are already in operation.